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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,825	03/16/2001	Minyao Mao	OC0104US	6754

22849 7590 11/07/2002

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EXAMINER

TAMAI, KARL I

ART UNIT PAPER NUMBER

2834

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,825

Applicant(s)

MAO ET AL.

Examiner

Tamai IE Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 17, 18 and 22-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-16 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5, 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2834

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in Paper No. 8 is acknowledged. Claims 17, 18, and 22-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions of Group II and III.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1-3, 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Foster (US 6351201). Foster teaches a bi-stable electrostatic actuator with an actuator having two capacitanced between different parts of the moving member. Foster shows the 2nd and 4th parts being at least 3x wider than the 1st and 3rd. Foster teaches the device being a bistable switch/latch with a spring arm. Foster teaches the moving member having fingers extending in opposite axial directs and a second fixed finger

Art Unit: 2834

adjacent the moving finger which is electrically couple to the first fixed finger, where the moving member is toggled between to positions by an electrostatic pulse.

4. Claims 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Elkuch (US 3,769,531). Elkuch teaches an electrostatic actuator with an electrode having a short and tall portion at the tip of the electrode, where the tall portions are adjacent each other.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster (US 6351201). Foster teaches every aspect of the invention except the range of the electrodes being less than 4 and greater than 6 microns. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Foster with the electrodes being less than 4 and greater than 6 microns to optimize the performance of the actuator, and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (see *In re Aller*, 105 USPQ 233).

Art Unit: 2834

7. Claims 11-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster, in further view of Sugiyama et al.(Sugiyama). Foster teaches every aspect of the invention except the fixed electrodes having thicker and thinner portions.

Sugiyama teaches an electrostatic actuator(sensor) having thicker portion near the distal end of the electrodes to increase the sensitivity of the actuator. Sugiyama teaches the electrodes having fingers extending in opposite direction. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Foster with the stator electrodes of Sugiyama to increase the sensitivity of the actuator.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foster and Sugiyama, in further view of Adams et al. (US 5,914,553). Foster and Sugiyama teach every aspect of the invention except the center portion of the wide electrode being removed. Adams teaches a hole in the middle of the electrodes(figure 9) to form a box configuration with improved rigidity. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Foster and Sugiyama with a hole in the electrode, as in Adams, to increase rigidity.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elkuch (US 3,769,531). Elkuch teaches every aspect of the invention except the height of the electrodes. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Foster with the tall electrodes height being

Art Unit: 2834

at least 2x the small electrodes to optimize the performance of the actuator, and because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (see *In re Aller*, 105 USPQ 233).

Allowable Subject Matter

10. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. The facsimile number for the Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
November 6, 2002

KARL TAMAI
PRIMARY EXAMINER

